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ABSTRACT

This chapter is part of a book that recounts the year's work at the Early Childhood Development Center (ECDC) at Texas A & M University-Corpus Christi. Rather than an "elitist" laboratory school for the children of university faculty, the dual-language ECDC is a collaboration between the Corpus Christi Independent School District and the university, with an enrollment representative of Corpus Christi's population. The chapter details development of a wellness model for children enrolled in the ECDC. Specifically, the study implemented a screening program that included physical assessment, diet evaluation, personal histories, biochemical tests, and anthropometrics; and designed, implemented, and evaluated a series of educational presentations for children and parents. Preliminary findings included detailed health statistics for participating children and parents. A nutrition and exercise camp was conducted, and the health status of 43 students will be tracked. (EV)

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Chapter 13

A School Healthcare Program for Low Income Families of Very Young Children

Esperanza Villanueva Joyce

PS 030364

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The United States has one of the most ethnically diverse populations in the world. This diversity has grown because the country is so vast geographically and for many years has had fairly open immigration laws. While African Americans make up a significant percentage of the American population, Hispanics are the fastest growing minority. It is estimated that more than 32 million Hispanics live in the U.S. (Bureau of the Census, 2000). According to the Census Bureau Facts (1999), Hispanics are subdivided into Mexican-Americans (63 percent), Puerto Rican (14 percent), Cuban (4 percent), and Central or South Americans (14 percent). Texas' population of over 20 million is 20% Hispanic. In Nueces County, Texas, the population is over 300,000; 55.8% of that population is of Hispanic origin, primarily Mexican-American (Bureau of the Census, FSCPE, 2000).

A variety of chronic health conditions and concomitant social problems generally exist in poor minority populations. Violent trauma and a higher prevalence of mental illness are two medical situations associated with poverty. Higher infant mortality rates are often seen in subgroups such as African Americans, American Indians, and Mexican-Americans. Certain chronic disease conditions also occur more frequently in specific minority groups. For example, diabetes is pronounced in Mexican-Americans and hypertension is predominantly found in Blacks. Another concern is that the incidence of obesity in children has increased by 59% in the United States (American Heart Association, 2000). This is particularly significant because obesity leads to chronic diseases such as coronary heart disease, diabetes, adult obesity and hypertension. In Nueces County, tuberculosis is endemic, and cardiovascular disease and cancer are the top mortality causes (Bureau of the Census, FSCPE, 2000).

Early Childhood Development Center

The Early Childhood Development Center (ECDC) on the campus of Texas A&M University-Corpus Christi (TAMUCC), was established in November 1996, with eighty-eight children admitted to its dual language program (English and Spanish). The children were residents of the city of Corpus Christi and were selected via a lottery system. They represented a mix of ethnic backgrounds as well as socio-economic levels. Currently, there are 128 children enrolled in grades

pre-K to three. Approximately 63% percent of the student population has a low socio-economic background. This ethnic mix and socio-economic background is intended to reflect the population enrolled in the Corpus Christi Independent School District (CCISD).

The health care of the ECDC children is provided by a registered nurse who operates from a clinic within the ECDC. In addition, a pediatric nurse practitioner (PNP), an employee of the School of Nursing who is also the Director of the Island Wellness Clinic (housed at the ECDC), serves as a consultant to the registered nurse. Approximately 200 visits per month are logged in the school nurse's records. Ailments ranging from stomachaches and fevers to minor trauma are some of the common complaints presented by ECDC children and addressed by the school nurse. Oral medications and inhaler and nebulizer treatments are also administered.

The school nurse maintains records in a computerized master system that allows her to record data such as physical assessments, vital statistics, and hearing and vision results for each child enrolled in the ECDC. The school nurse is also involved in teaching health-related topics at least twice a week. Instruction is specifically tailored to the children's grade level. The school complies with the rules and regulations of the CCISD, and all required reports and statistics are filed and kept confidential.

Wellness and nutrition go hand in hand. The children at the ECDC are served breakfast and lunch in the cafeteria. The food services department of the Corpus Christi Independent School District (CCISD) provides meals. The CCISD provides lunches for 31,000 students district-wide; 21,753 of the students are eligible for free meals or reduced-priced meals (CCISD, 2000).

Optimizing Wellness through Screening and Education Project

The relationship between nutrition and wellness, especially in children and families, served as the focus of a research study at the ECDC. The basis for this wellness study was the belief that potential health risk factors in students and their parents could, and should, be identified at an early stage. Traditionally, childbearing women, infants, and children are considered to be the most dependent and vulnerable members of the community. If health risk factors are not detected at an early age, they will impact the future productivity as

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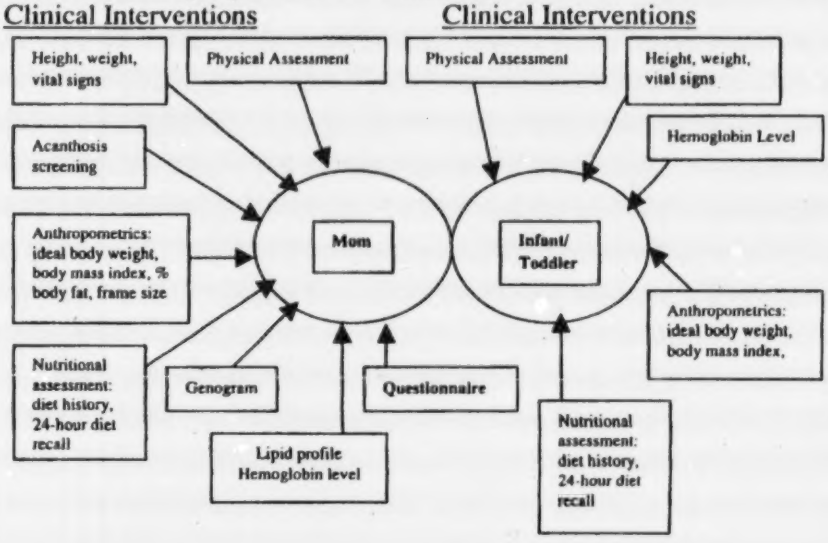
well as the intellectual achievement of children. The health of children ensures society's future.

This wellness study attempted to assess the mother's knowledge of issues related to parenting, child-care, and anticipatory guidance. Thus, the results of the study have implications for nursing practice, parent teaching, and interventions with children. It is also hoped that this project might serve as a model for involving the university's nursing students in practical research. In addition, referrals to internal groups such as counseling, reading, and motor development specialists will provide a coalition of experts working together to improve the children's wellness levels.

Thus, the research study's focus was: to develop a wellness model (see below) for children enrolled in the Early Childhood Development Center, to promote the involvement and coordinated participation of parents or significant others, and to reduce the risk of illness in children. The health variables measured in the study are shown in Figure 1.

Figure 1
Data collection for parents and children



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Purpose

The specific aims of the study were to: (a) collaborate with ECDC faculty, staff, parents and food services to provide support for the project, (b) implement a screening program that included physical assessment, diet evaluation, personal histories, biochemical tests, and anthropometrics and, (c) design, implement and evaluate a series of educational presentations for children and parents.

The timeline of the study consisted of the following:

	Activities	2001 Semester
1.	Conduct parent-child meetings	Spring, Summer
2.	Develop screening program	Spring-Summer.
3.	Train assistants to a provide screenings, conduct assessments and nutritional interventions	Spring
4.	Implement the screening program	Spring, Summer,
5.	Develop, implement and evaluate educational programs	Spring, Summer
6.	Develop a dissemination plan	Summer, Fall

The sources of data collection for the study included:

1. Medical Data:	Medical history form both for mother and infant/toddler
2. Socio-economic data:	Questionnaire
3. Family genogram:	Shows family history and patterns of health-related information at least for three generations
4. 24 hr. diet recall:	Shows the intake of food for the last 24 hours
5. Diet History:	Indicates change of appetite, food intolerance or other problems related to nutrition
6. Clinical observation:	Physical assessment for mother and infant/toddler
7. Anthropometrics:	Height, weight, changes in weight in last six months, Body Mass Index (index for estimating obesity) Ideal Body Weight (detects over-nutrition/under-nutrition), Mid-arm Circumference (detects muscle mass), and Frame size
8. Chemistry:	For the mother, a lipid Panel via a finger-stick is performed and a drop of blood is collected to obtain cholesterol, HDL, triglyceride, and glucose levels. In addition, a hemoglobin level is also collected. For the infant/toddler, a sample of blood is collected from the foot in order to obtain a hemoglobin level.

Evaluation

Evaluation for this project was both formative and summative. Formatively, the evaluation plan allowed researchers to make refinements in the approach and the methods of reaching the target population. Summatively, the evaluation provided a comprehensive assessment of the project's performance in achieving the anticipated outcomes. See Table 1.

Table 1. Evaluation Process and Outcomes

Objective	Process	Outcomes/Evaluation
1. Plan parent-child meetings	Convene meetings	Maintain minutes
2. Develop screening program	Develop screening program; determine referral system	Written goals and objectives; forms for documenting assessments; documentation of all tools utilized; track referrals
3. Train assistants to provide screening program, conduct assessments, and nutritional interventions	Recruit assistants; develop training package	Manual for trainees, evaluate trainees
4. Implement the screening program	Schedule screening	Track screenings; evaluate results
5. Develop, implement and evaluate educational programs	Develop program; Implement plans; Evaluate interventions	Track family risk factors; track family compliance; track children's eating habits and knowledge of nutrition Provide growth and development guidance Establish a summer camp for children.

Pre-Implementation of the Study

Prior to the implementation of the study, the school principal received information about the study and gave permission for the research. Once the principal approved, the study was sent to TAMUCC IRB (Institutional Review Board) for approval. A meeting with parents followed to determine their interest in the study. Initially,

only four mothers returned the consent form. Within weeks, other parents agreed to participate in the study.

Implementation of the Study

A total of 18 parents/guardians and 30 children participated in the study. Each parent completed a questionnaire and a past medical history form. In addition, each parent participated in a variety of assessments that included: height, weight, temperature, blood pressure, physical assessment, Acanthosis Nigricans screening, 24 hour diet recall, diet history, and laboratory screening. The laboratory screening consisted of obtaining blood via a finger-stick to test for cholesterol, triglycerides, HDL, LDL, glucose and hemoglobin levels.

Preliminary Findings

Children statistics

Thirty children participated in the study. A physical assessment was conducted for each child; no abnormalities were noted. The height of the children ranged from 23 inches to 56.5 inches. The weight range of the children was 17 pounds to 50 pounds. Normal hemoglobin range for this age group is 10.4 to 12.8. The hemoglobin level of those children who participated in the study ranged from 10.3 to 15.4. Overall, it was noted that the children assessed were healthy, had good motor skills and were developing as expected.

Eighteen parents participated in the study: two male (12%) and 16 female (88%). Their ages ranged from less than 20 (6%) to 21 to 40 (50%). The remainder (44%) did not answer this question. Seventy-eight percent of the parents were Hispanic. Eighty-nine percent were married and living in a nuclear family. There was only one single and one separated parent. The reported income for the participating parents ranged from $10,000 to $20,000 (17%) and from $20,001 to $40,000 (56%). The remainder (27%) of the parents did not provide income information. The educational background indicated that 61% of the parents had completed one to four years of college; 39% had finished high school. Thus, a limitation of the study was that all of the parents were relatively well-educated.

Adult Health-Related Statistics

The participating parents were relatively healthy, with 89% stating that they had seen a doctor within the last year. Fifty-six percent claimed to have health insurance, 39% stated they had no insurance, and 5% did not respond to the question. Only 28% of the parents worked, yet 67% indicated that they did not have enough time to do the things they like to do. Most of the parents reported that they engaged in rather sedentary activities; 94% indicated that they watched television and 72% stated that they read magazines as their hobbies. In addition, exercise did not play a prominent role in their daily activities. Thirty-three percent of the parents reported never exercising. Fifty percent of the parents reported being overweight. The average weight for these subject was 148 pounds, with the weight ranging from 103 to 225 pounds. The body mass index (BMI) for these parents ranged from 21 to 31. BMIs higher than 25 are associated with obesity, and, therefore expose the subjects to higher health risks. Nutritionally, the parents who participated in the study seemed to eat fairly balanced diets. Eighty-nine percent of the subjects reported ingesting meat frequently, 72% reported eating green vegetables, and 78% included breads and fruits in their diets. Only 33% of the subjects indicated eating eggs daily.

Laboratory results of the lipid profile revealed that most of the subjects had chemistries within the normal ranges. Ideally, adult cholesterol levels should be kept below 220. The cholesterol range for the study group was 134 to 255. Adult levels of triglycerides, the amount of fat in the circulating blood, should be between 10 and 150. The triglyceride level in the study group ranged from 45 to 237. Only two of the subjects had triglyceride levels higher than 150. Only one of the parents had an elevated glucose level. Hemoglobin, an indicator of iron deficiency, should be maintained between the 11 and 16 range. The average hemoglobin level of the group was 13, with ranges of 11 to 16.

Parents were given immediate feedback regarding their laboratory test results. They were also given information regarding a variety of nutrition topics. In addition, recommendations such as decreasing saturated fat content in the family's diet and information about diabetes, obesity and heart disease were provided for the parents.

Recent Study

A nutrition and exercise camp was conducted during Summer 2001. Sixty-three students attended this camp. The mission of this camp was to introduce children and their parents to healthy eating and appropriate exercise. Staff from the Texas A&M Agriculture Center and from the Texas A&M University-Corpus Christi School of Nursing participated in teaching parents to prepare healthy meals. In addition, camp counselors conducted structured exercise and nutrition activities with the children. The health status of 43 students (32.8% of the ECDC population) is being tracked during the Fall 2001 and Spring 2002 school year.

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